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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,308	10/22/2003	Frank Schmidt	979-037	8584

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EXAMINER

COOKE, COLLEEN P

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/692,308

Applicant(s)

SCHMIDT, FRANK

Examiner

Colleen P. Cooke

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1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Specification

The disclosure is objected to because of the following informalities: The specification appears to refer to reference numbers of drawings (e.g. page 5, lines 19, page 6, line 2, etc.) yet there appear to be no drawings in the case as filed. The disclosure must be corrected by either provided the drawings referred to or removing the reference numbers through the specification.

Appropriate correction is required.

Drawings

The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). See the objection of the disclosure above, made in conjunction with this requirement; given the subject matter it would appear appropriate to have drawings in this case.

Claim Objections

Claim 13 is objected to because of the following informalities: The claim appears to inadvertently contain a typographical error in line 4 which recites "super conducting" instead of "superconducting". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 4-7, 9, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Norton et al. (6,849,580).

Norton et al. teaches a superconducting cable (see Figures 2 and 3) including a hollow carrying element (344), wound with at least one layer having 2 or more superconducting elements (346 or 352), wherein the superconducting elements can be YBCO tapes (Column 2, lines 64-67; see also Figure 1) having a biaxially textured superconducting layer on a substrate which can be amorphous (Column 5, lines 52-55; Column 6, lines 18-22) and therefore have no lattice matching. The cable further has an insulating layer (350) between the two superconducting layers (346 and 352).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikami et al. (EP 0650205 A1) in view of Beach et al. (6440211).

Fujikami et al. teaches a superconducting cable (see Figures 5-7) including a carrying element (core or former 55) which is cylindrical or spiral, is preferably hollow, may be metal and therefore electrically conductive, and also may have a spiral groove (page 5, lines 20-33). Fujikami et al. teaches that the core can also be solid, and may have an insulating layer on it prior to any superconducting layers (page 6, lines 14-16). Fujikami et al. teaches that the core has is wound with superconducting tapes (51) in at least two or more layers (61, 62), each layer formed by an arbitrary number of tapes and with insulating layers (50, 60, 62, 65) between each layer (page 5, lines 34-41). Fujikami et al. further teaches that the tapes may use YBCO, (Bi,Pb)SCCO, or TSCCO superconducting material (page 4, lines 45-47). Fujikami et al. teaches that the superconductors are multi-filament wires in a silver matrix of the powder-in-tube type (page 4, lines 49-55) and therefore does not teach that the superconductors are coated conductors.

Beach et al. teaches that coated conductors (i.e. a substrate, optional intervening buffer layers and a top superconducting layer) can be used for power transmission lines (Column 1, lines 26-37) and that these coated conductors can have as a top layer a biaxial YBCO layer (Column 10, lines 5-51).

It would have been obvious to modify the superconducting cable of Fujikami et al. by using coated conductors such as the type taught by Beach et al. because Beach et al. teaches that the coated conductors can be used in such superconducting cables (Column 1, lines 26-37).

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikami et al. (EP 0650205 A1) in view of Alford et al. ("High-temperature superconducting thick films").

Fujikami et al. teaches a superconducting cable (see Figures 5-7) including a carrying element (core or former 55) which is cylindrical or spiral, is preferably hollow, may be metal and therefore electrically conductive, and also may have a spiral groove (page 5, lines 20-33). Fujikami et al. teaches that the core can also be solid, and may have an insulating layer on it prior to any superconducting layers (page 6, lines 14-16). Fujikami et al. teaches that the core has is wound with superconducting tapes (51) in at least two or more layers (61, 62), each layer formed by an arbitrary number of tapes and with insulating layers (50, 60, 62, 65) between each layer (page 5, lines 34-41). Fujikami et al. further teaches that the tapes may use YBCO, (Bi,Pb)SCCO, or TSCCO superconducting material (page 4, lines 45-47). Fujikami et al. teaches that the superconductors are multi-filament wires in a silver matrix of the powder-in-tube (PIT) type (page 4, lines 49-55) and therefore does not teach that the superconductors are coated conductors.

Alford et al. teaches that coated conductors have been developed as an alternative to PIT type conductors and show excellent properties by comparison (page 170, first paragraph). Alford et al. further teaches that these coated conductors can be made of rare earth barium copper oxides including YBCO (page 170, second paragraph) and that various substrates may be used including

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those wherein the undermost substrate would not have lattice matching for texturing, which can be achieved through the use of later buffer layers or various process techniques (see sections 2.2-2.3 on substrate materials; see also section 3.5).

It would have been obvious to modify the superconducting cable of Fujikami et al. by using coated conductors such as the type taught by Alford et al. because Alford et al. teaches that the coated conductors were developed as an alternative to PIT type conductors, as an improvement showing excellent properties (page 170, first paragraph). It would be obvious to substitute the coated conductors for the PIT conductors because, as Alford et al. teaches, the progression of the superconducting art has led from PIT to coated conductors.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Norton et al. (6,849,580), in view of Park et al. (6,812,191).

Norton et al. teaches the superconducting cable as described with respect to claim 1 above including that the superconducting material may be YBCO. Norton et al., however, does not teach the limitations of claim 3 wherein the rare earth barium cuprate contains one of the elements listed.

Park et al. teaches that it is desirable for YBCO to additionally contain Zn (see abstract and Columns 2-3, lines 66-7).

It would have been obvious to modify the YBCO of Norton et al. to also contain Zn because Park et al. teaches it improves the performance of the YBCO and additionally that Zn-containing YBCO may be used in superconducting cable specifically (Column 1, lines 52-54).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colleen P Cooke whose telephone number is 571-272-1170. She can normally be reached Mon.-Thurs. 8am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, her supervisor, Stan Silverman can be reached at 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Colleen P Cooke
Primary Examiner
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